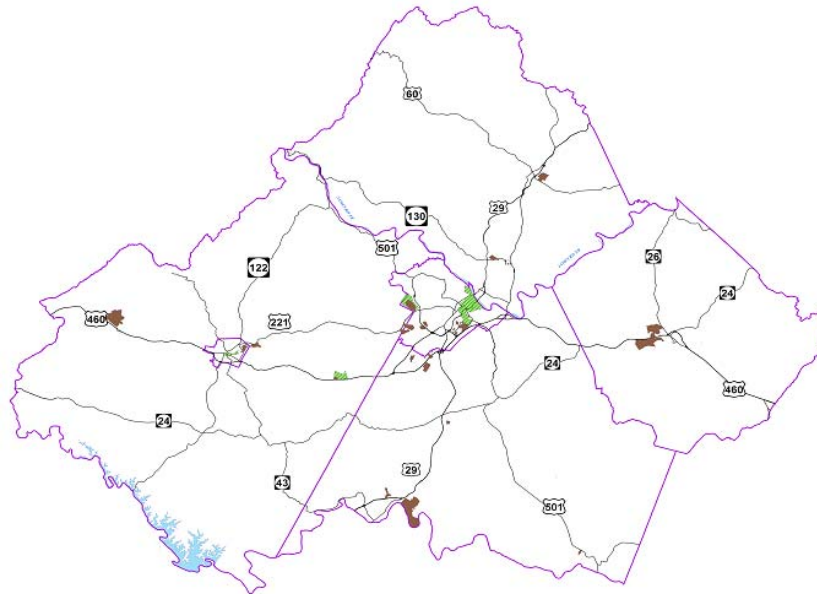
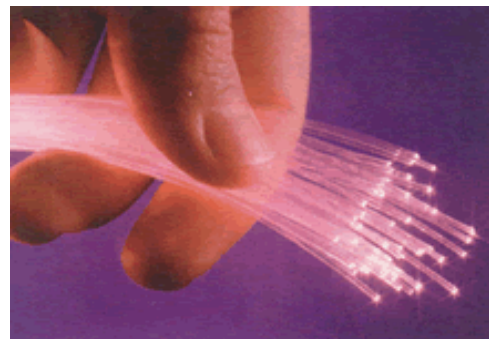


Virginia's Region 2000 Broadband Infrastructure Study

Supplement – 3G/EV-DO Technology



Summer 2008





Virginia's Region 2000 Partnership is a regional collaborative effort comprising of six essential components: Local Government Council, Economic Development Council, Technology Council, Workforce Investment Board, Young Professionals of Central Virginia, and The Center for Advanced Engineering and Research. The overall goal of this organization is to promote the region to national and international companies to create job growth and economic advancement within the region.



The Local Government Council, responsible for this report, works with the four counties, two cities, and four towns within the region to improve regional cooperation and reduce government redundancy. We provide a forum for innovative and creative dialog among these localities to address quality of life issues on a regional prospective.

For more information about Virginia's Region 2000 Partnership, The Local Government Council, or to request more information about this report, please visit our website or contact:

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Virginia's Region 2000

Broadband Infrastructure Study Supplement – 3G/EV-DO Coverage

Summer 2008

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Section I - Introduction

Cellular Wireless Internet

Virginia's Region 2000 Partnership compiled the Broadband Infrastructure Study in Spring 2008; this report was an update to a previous study compiled in 2004. Traditional broadband service, such as DSL and wireless, was the focus of the previous study. Recent information has come forward to show that 3G and EV-DO (Evolution Data Optimized) service provided by cellular companies is being utilized by a growing market within Virginia's Region 2000. Coverage areas tend to be much wider for these companies than the traditional broadband providers, and this coverage can help fill in broadband gaps presently located within the region. The problem is that the public is generally not aware of these services, so it is important that cell phone providers and local leaders inform residents who do not have access to traditional broadband services.

This supplement to the Broadband Infrastructure Study will solely focus on cell phone providers and the broadband services they provide within Virginia's Region 2000. Only broadband plans/coverage pertaining to laptop and desktop computers is analyzed; Blackberry, iPhone, and Smart Phones are not listed in this report. As with more traditional broadband providers, each cell phone company offers different plans and service areas for its subscribers. Most residents in the region have access to at least one provider's wireless technology; however, stipulations do exist. Some rural areas may be too far from a tower, or residents may be located in "dead space" in a valley. Generally, if a resident can receive a cell phone signal they are able to access wireless broadband. Included in this supplement are plans and prices, necessary equipment, and coverage data. All information in this report was attained from provider's websites; being public knowledge it is acceptable to display this report to the public.

Technology

Three technologies presently exist within Virginia's Region 2000 to provide users with wireless Internet from cellular companies. These technologies are:

- Wireless – can be transmitted upwards of 10 miles from high-capacity equipment located on tall towers/buildings, or can be transmitted less than 100 feet through small routers in designated hotspots, such as restaurants and shops. Capable of up to 10Mbps (business) near an access point. Security issues, weather, and terrain are concerns of this technology.
- 3G and EV-DO – powerful wireless systems that provide speeds between 144 Kbps and 2Mbps and are great for full-motion video, streaming music, 3D gaming, and faster web browsing. Offer a high degree of mobility with a range of 2-5 miles from a tower. Terrain and tower location can influence signal reception.

Cell phones have been able to access these technologies for years; however, it has only been within the last 2-3 years that wireless cards have been easily available for computers. It is now possible to connect a wireless card to a laptop and drive around Region 2000 and access the Internet via 3G technology even in areas where it has not been available through traditional means. What is also impressive is that many users report faster speeds than DSL, even in rural areas not accustomed to broadband coverage.

As with other broadband services within the region, technology will be changing cellular broadband in the future. Companies such as T-Mobile, which does not presently have a nationwide network, will be rolling out service in larger metropolitan areas in 2008. Verizon plans to launch 4G in the next few years, which will increase broadband speeds exponentially for those in the present 3G service area. As more residents in the region begin to use these services it is conceivable that the number of plans will increase while prices decrease.

Providers

Seven cell phone providers have been identified within Virginia's Region 2000, and of those six offer at least some form of wireless broadband Internet that is accessible from a computer. U.S. Cellular does provide a wireless Internet network; however, according to their customer service department it is only at dial-up speeds. While T-Mobile offers wireless Internet to customers it is only available at approximately 8,500 hotspots in the nation; there is no blanket coverage within the region. On the following page is the list of each provider within the region, along with the address and phone numbers for all stores where customer support is available.

Wireless Broadband Service Plans

A number of service plans are available for residents of Region 2000 that offer 3G/EV-DO technology. Most 3G/EV-DO plans are around \$60 per month, require a 2-year contract, and offer speeds equal to or above DSL service. The following companies offer specialized services in addition to 3G/EV-DO:

- Alltel – offers access to thousands of Wi-Fi hotspots across the nation; customers can pick plans for 3G/EV-DO, Wi-Fi, or a combination of the technologies.
- nTelos – offers Portable Broadband, which is a wireless system equal to DSL or cable service and requires no outside antennas or dishes; less expensive than 3G/EV-DO.

In order to access the 3G/EV-DO and wireless services, customers must purchase a wireless card for their laptop and/or desktop computer. This card receives the broadband signal from a tower, allowing customers to access the Internet anywhere they are within range of a tower, including riding down the road. These cards, which usually plug into a USB port, range in price from approximately \$80 to \$330. Most providers run rebates and discounts on these cards, and in some cases these rebates will cover the entire cost of the wireless card. Plans, pricing, and some wireless cards offered by cellular providers are listed beginning on page six.

Region 2000 – Cellular Phone Providers

| Provider | Name | Address | City/State/Zip | Phone Number | Website |
|----------------------|--|-----------------------------|---------------------------|----------------|-----------------|
| Alltel | Alltel Retail Store - Mountview Commons II | 3919 Wards Road | Lynchburg, VA 24502 | (434) 237-1729 | www.alltell.com |
| | Alltel Retail Store - Amelon Sq. Shopping Ctr. | 2725 South Amherst Hwy. | Madison Heights, VA 24572 | (434) 929-1248 | |
| | Alltel Retail Store | 21039 Timberlake Road | Lynchburg, VA 24502 | (434) 832-0371 | |
| | Alltel Retail Store | 18013 Forest Road | Forest, VA 24551 | (434) 385-1912 | |
| | Cellular Communications of Amherst | 567 South Main St. | Amherst, VA 24521 | (434) 841-6783 | |
| AT&T | AT&T | 210 A Simons Run | Lynchburg, VA 24502 | (434) 258-8300 | www.att.com |
| | AT&T Authorized Retailer | 4327 Boonsboro Rd. | Lynchburg, VA 24503 | (434) 386-6600 | |
| | AT&T Authorized Retailer | 14243 Forest Rd. | Lynchburg, VA 24551 | (434) 385-1995 | |
| | Wal-Mart Connection Center | 125 Clarion Rd. | Altavista, VA 24517 | (434) 309-2245 | |
| nTelos | nTelos - Wards Road | 4018 Wards Rd. Suite E | Lynchburg, VA 24502 | (434) 401-0004 | www.ntelos.com |
| | nTelos - Fort Avenue | 5508 Fort Ave. Suite D. | Lynchburg, VA 24502 | (434) 401-0004 | |
| | nTelos - Graves Mill Shopping Center | 18013 Forest Rd. Suite C | Forest, VA 24551 | (434) 401-0004 | |
| | nTelos - River Ridge Mall | 3405 Candler's Mountain Rd. | Lynchburg, VA 24502 | --- | |
| Sprint/Nextel | Sprint Mall Kiosk - River Ridge Mall | 3405 Candler's Mountain Rd. | Lynchburg, VA 24502 | (434) 239-6376 | |
| | Sprint Store | 3920 Wards Rd. | Lynchburg, VA 24502 | (434) 239-8200 | |
| | Cellcom | 20911-C Timberlake Rd. | Lynchburg, VA 24502 | (434) 832-800 | |

Region 2000 – Cellular Phone Providers - Continued

| Provider | Name | Address | City/State/Zip | Phone Number | Website |
|----------------------|---|----------------------------------|---------------------------|----------------|--------------------|
| T-Mobile | T-Mobile - Wal-Mart #1350 | 3900 Wards Rd. | Lynchburg, VA 24502 | (434) 832-0304 | www.t-mobile.com |
| | T-Mobile - RS Sam's #6458 | 3912 Wards Rd. | Lynchburg, VA 24502 | (434) 237-2680 | |
| | T-Mobile - Best Buy #444 | 4024 Wards Rd. | Lynchburg, VA 24502 | (434) 239-9885 | |
| | T-Mobile - Target #1275 | 4028 Wards Rd. | Lynchburg, VA 24502 | (434) 239-6163 | |
| | T-Mobile - Wal-Mart #2565 | 197 Madison Heights Sq. | Madison Heights, VA 24572 | (434) 846-9650 | |
| | T-Mobile - Wal-Mart #1399 | 1126 E. Lynchburg/Salem Tpk. | Bedford, VA 24523 | (540) 586-6176 | |
| U.S. Cellular | Total Communications (Cellular Express) | 3405 Candler's Mountain Rd. | Lynchburg, VA 24502 | (434) 455-0270 | www.uscellular.com |
| | U.S. Cellular | 3911 Wards Rd. | Lynchburg, VA 24502 | (434) 832-0808 | |
| | Total Communications (Cellular Express) | 17898 Forest Rd. | Forest, VA 24551 | (434) 455-0346 | |
| | B&H Computers | 163 Madison Heights Square | Madison Heights, VA 24572 | (434) 847-4712 | |
| | D.J. Wireless, LLC | 21664A Timberlake Rd. | Lynchburg, VA 24502 | (434) 237-5985 | |
| | D.J. Electronics Plus, LLC | 1128 E. Lynchburg Salem Tpk. | Bedford, VA 24523 | (540) 586-9704 | |
| | Cellular Now | Hwy 460 W, P.O. Box 447 | Appomattox, VA 24522 | (434) 352-7526 | |
| | B&H Computers | 105 Clarion Rd. | Altavista, VA 24517 | (434) 369-9154 | |
| | Glenwood Esso & Oil Co., Inc. | 2074 Smith Mountain Lake Pkwy. | Huddleston, VA 24014 | (540) 297-5297 | |
| | Guthrie's True Value Hardware | 102 Main St. | Brookneal, VA 24528 | (434) 376-3126 | |
| | D.J. Wireless, LLC | 14600 Moneta Rd. | Moneta, VA 24121 | (540) 296-0586 | |
| Verizon | Valley View | 4801 Valley View Blvd. NW, St. A | Roanoke, VA 24012 | (540) 562-4836 | www.verizon.com |
| | Circuit City - Roanoke | 1898 Valley View Blvd. NW | Roanoke, VA 24010 | (540) 563-5198 | |
| | Smith Mountain Lake Communications | 13699 Booker T. Washington Hwy | Moneta, VA 24121 | (540) 721-5298 | |

Service Plans, Equipment, and Pricing

| Provider | Plans | Price ¹ | Equipment ² | Price ³ | Speed ⁴ | Contract Term | Comments |
|---------------|------------------------------------|--------------------|-----------------------------|--------------------|--------------------|---------------------|---|
| Alltel | National Wireless Internet | \$59.99 | Huawei EC228 | \$219.99 | 3.1 Mbps | 2-year | Some of these computer cards are free due to rebates, sales, etc. |
| | Extended Wireless Internet | \$99.99 | Huawei EC360 | \$269.99 | 2.4 Mbps | 2-year | |
| | Wireless Internet/Wi-Fi Bundle | \$69.98 | UTStarcom UM150 | \$219.99 | 3.1 Mbps | 2-year | |
| | Unlimited Wi-Fi ⁵ | \$9.99 | KPC680 ExpressCard | \$239.99 | 2.4 Mbps | 2-year | |
| | Pay-As-You-Go Monthly ⁵ | \$19.99 | | | | | |
| AT&T | DataConnect | \$60.00 | AT&T USBConnect 881 | \$249.99 | 1.4 Mbps | 2-year | AT&T has a number of laptop cards that are compatible with the 3G network. Most are free due to promotional events. |
| | | | Sierra Wireless AirCard 881 | \$299.99 | 1.4 Mbps | 2-year | |
| | | | Option GT Max 3.6 Express | \$199.99 | 3G | 2-year | |
| | | | Sierra Wireless Aircard 875 | \$149.99 | 3G | 2-year | |
| nTelos | Portable Broadband | \$34.95 | Portable Broadband Modem | --- | 1.5 Mbps | 2-year ⁶ | \$49.95 Set-up fee for portable broadband. Other aircards available upon request |
| | EVDO (REV-A) | \$49.99 | Aircard | \$99.99 | 1.3 Mbps | 2-Year | |
| Sprint/Nextel | Mobile Broadband Connection Plan | \$59.99 | Compass 597 by Sierra | \$249.99 | 1.4 Mbps | 2-year | All cards are EV-DO compatible. There are rebates associated with these cards. |
| | | | Ovation U727 by Novatel | \$299.99 | 1.4 Mbps | 2-year | |
| | | | Aircard 595 by Sierra | \$269.99 | 1.4 Mbps | 2-year | |
| | | | AirCard 597E ExpressCard | \$329.99 | 1.4 Mbps | 2-year | |

¹ Per month.

² Only some equipment is listed; more options may be available upon request.

³ One-time fees, which may be offset by savings and rebates.

⁴ Up to this speed; depending on terrain and distance speed may be impacted.

⁵ Alltel is partnered with thousands of wireless hotspots in airports, restaurants, etc. across the nation.

⁶ A monthly contract is available for \$44.95 per month (setup fee of \$49.95 still applies).

Service Plans, Equipment, and Pricing - Continued

| Provider | Plans | Price ¹ | Equipment ² | Price ³ | Speed ⁴ | Contract Term | Comments |
|----------------------|-----------------|--------------------|---------------------------------|--------------------|--------------------|---------------|--|
| T-Mobile | Hotspot | \$19.99 | Wireless card (sold separately) | --- | --- | --- | Service available at over 8,500 hotspots in the nation, mostly in airports, Starbucks, etc. |
| U.S. Cellular | --- | --- | --- | --- | --- | --- | Does not offer wireless Internet at broadband speeds, only at dialup speeds (40-50 Kbps) |
| Verizon | 5 GB per month | \$59.99 | Wireless UM 150 USB | \$79.99 | 4G | 2-year | Prices on equipment are reduced because of rebates. Plans are up to 1.4 Mbps. Stores located in Moneta; the closest outside of there are in Roanoke. |
| | 50 MB per month | \$39.99 | Wireless KPC680 | \$99.99 | EV-DO | 2-year | |
| | | | Wireless Aircard 595 | \$149.99 | REV-A | 2-year | |
| | | | Wireless USB727 Modem | \$199.99 | REV-A | 2-year | |

¹ Per month.

² Only some equipment is listed; more options may be available upon request.

³ One-time fees, which may be offset by savings and rebates.

⁴ Up to this speed; depending on terrain and distance speed may be impacted.

⁵ Alltel is partnered with thousands of wireless hotspots in airports, restaurants, etc. across the nation.

⁶ A monthly contract is available for \$44.95 per month (setup fee of \$49.95 still applies).

Section II – Coverage Data

General Coverage Description

3G/EV-DO technology has a much broader coverage area in Region 2000 than any other technology except satellite service. The cities of Lynchburg and Bedford are completely covered by most cellular providers, as are the major highway corridors throughout the region (U.S. 460, 29, 501, and 221). As with other types of broadband technology, some of the “fringe” areas of the region may lack coverage.

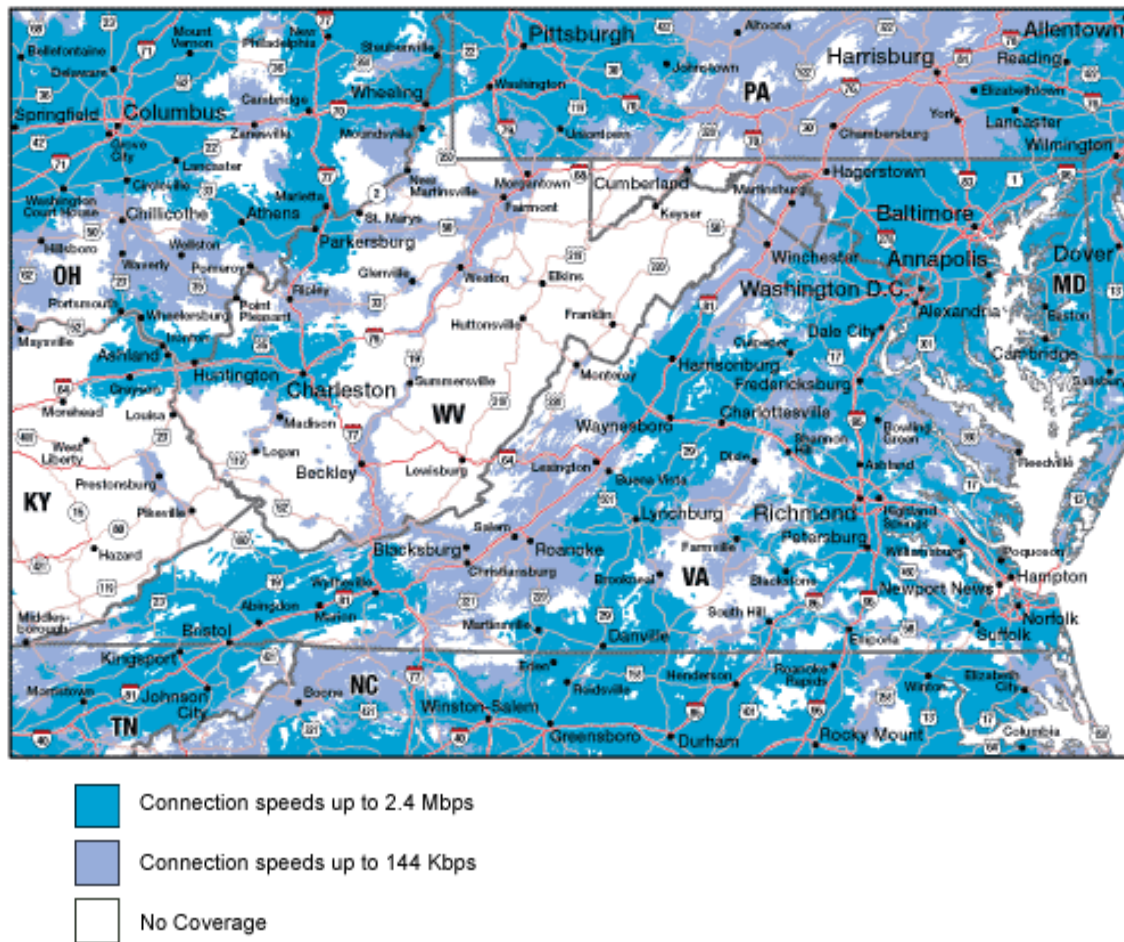
According to the maps provided, coverage may be most sporadic in the following areas:

- Mountainous areas of far northwestern Amherst County
- Northeastern and southern Appomattox County
- Southeastern and western Campbell County.

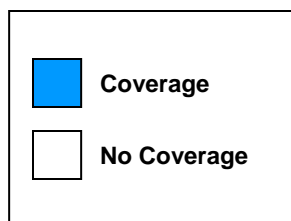
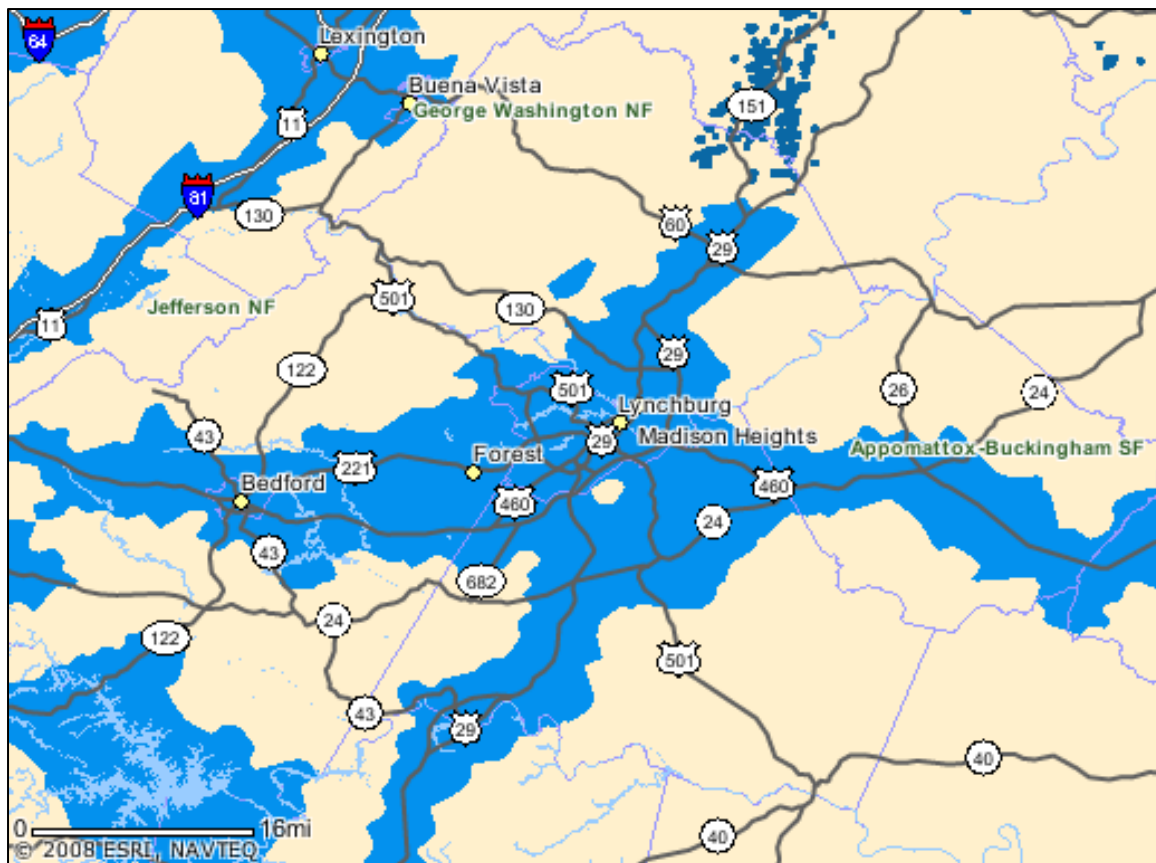
Generally speaking, wherever you can receive a cell phone signal you will be able to access 3G/EV-DO. Due to the region’s rolling to mountainous topography, “dead spots” may occur in some areas; therefore, it is possible to live within an identified coverage zone and still lack coverage. Cellular coverage has increased dramatically in the past five years, and this expansion will continue into the future. One major change that is likely to occur within the next few years is the merger of Alltel and Verizon; this may increase coverage and options throughout the region. Additionally, cell phone providers are constantly adding towers and expanding services and upgrading to newer technology.

The following pages contain coverage maps for each of the region’s five major cellular broadband providers. Maps were copied from the provider’s websites and are as close and descriptive as possible. Region 2000 will place these data into more detailed, thorough maps in the future. Unlike maps in the Broadband Infrastructure Study, these maps are available online; therefore, it is acceptable to display these maps where the general public may view.

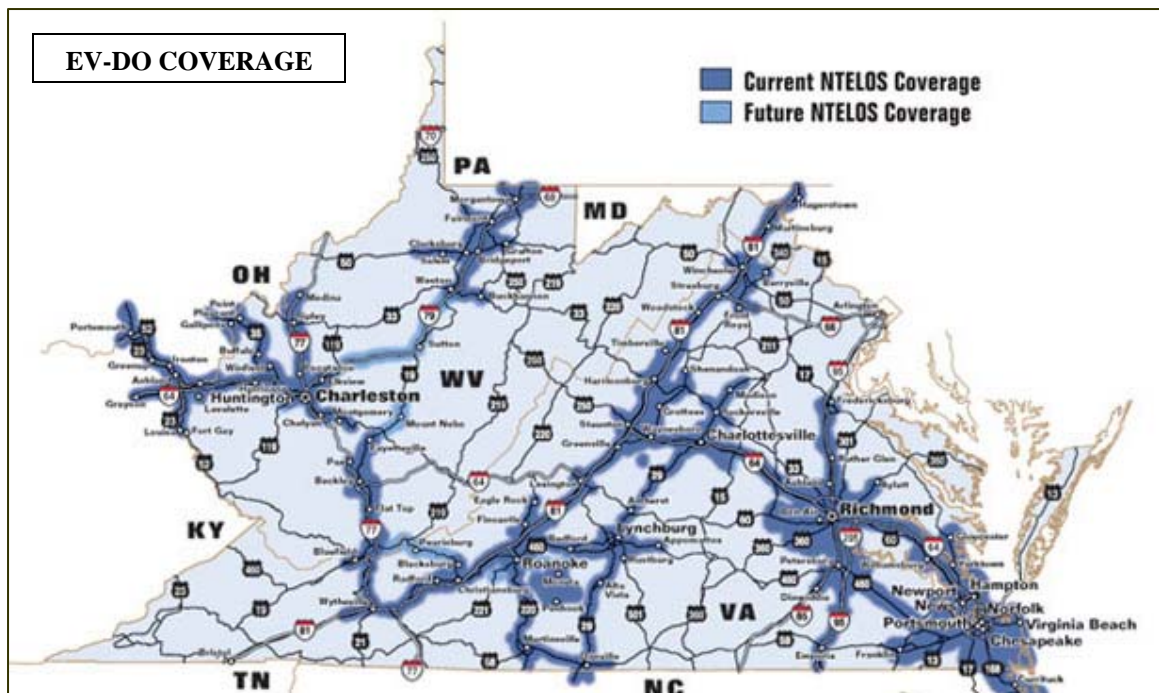
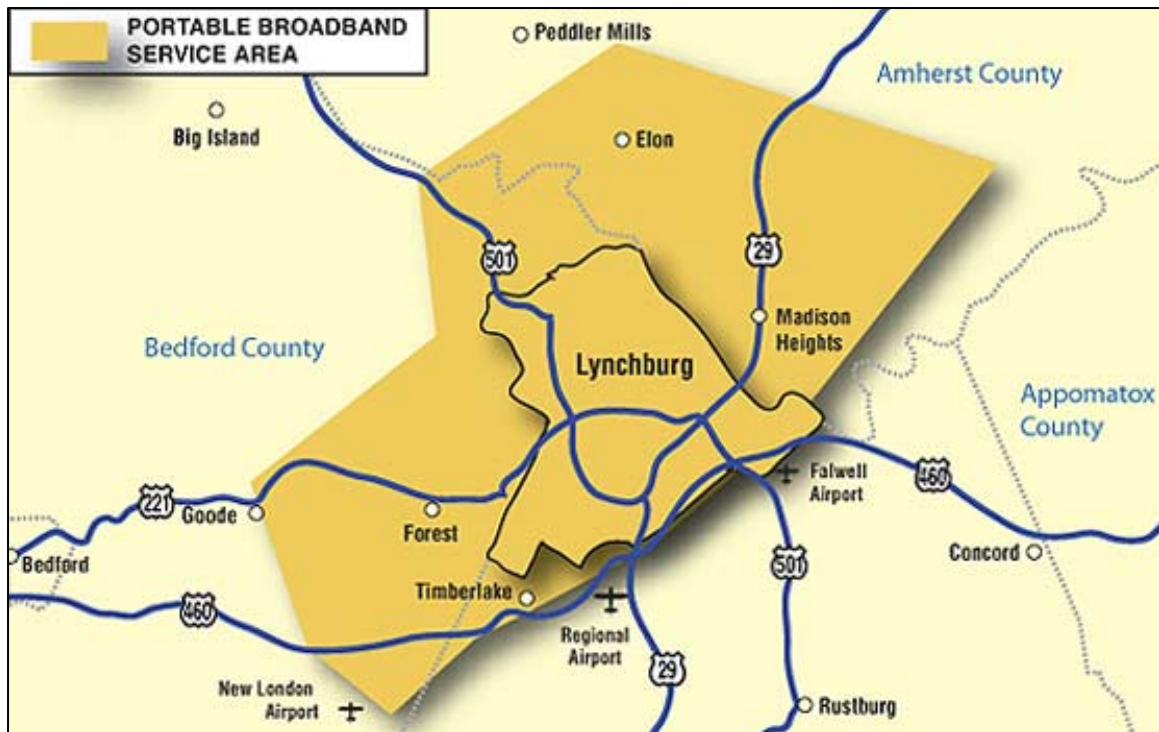
Alltel Wireless Internet Coverage



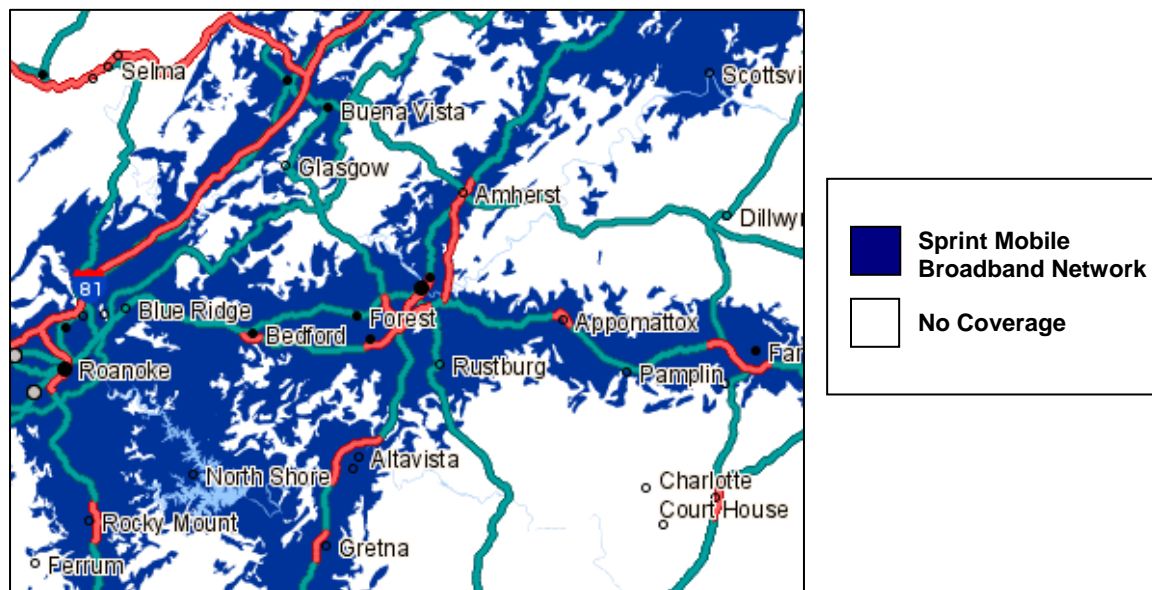
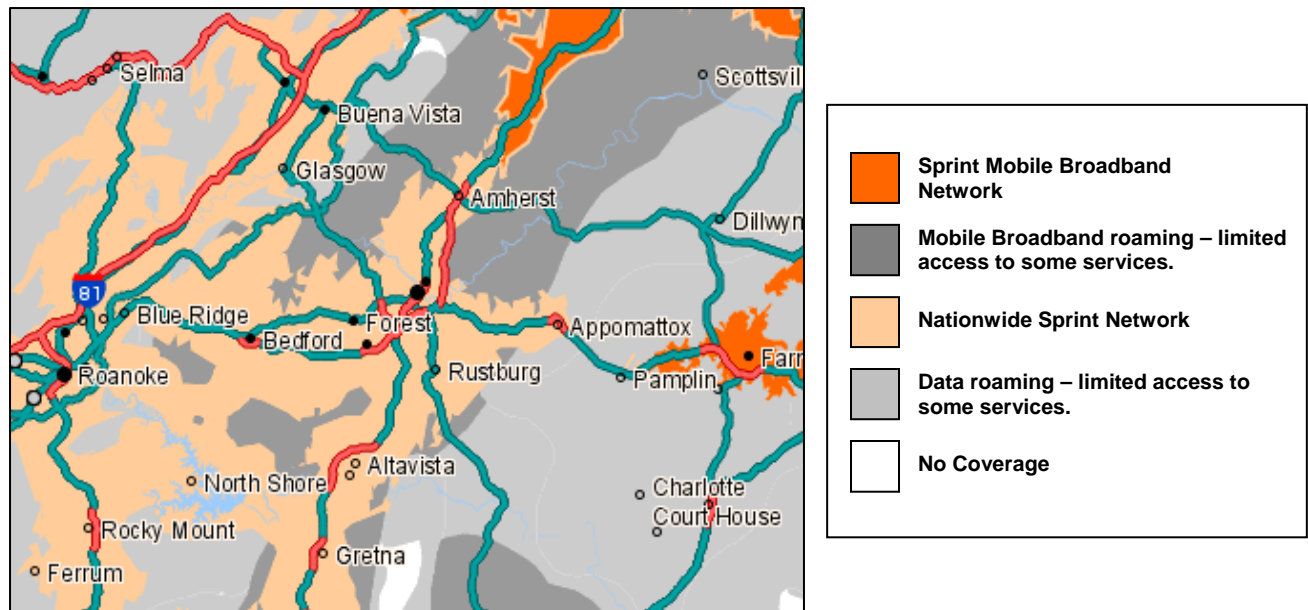
AT&T 3G Coverage



nTelos – Portable Broadband Coverage and EV-DO



Sprint/Nextel Broadband/3G Network Coverage



Verizon – Broadband and V CAST Coverage

